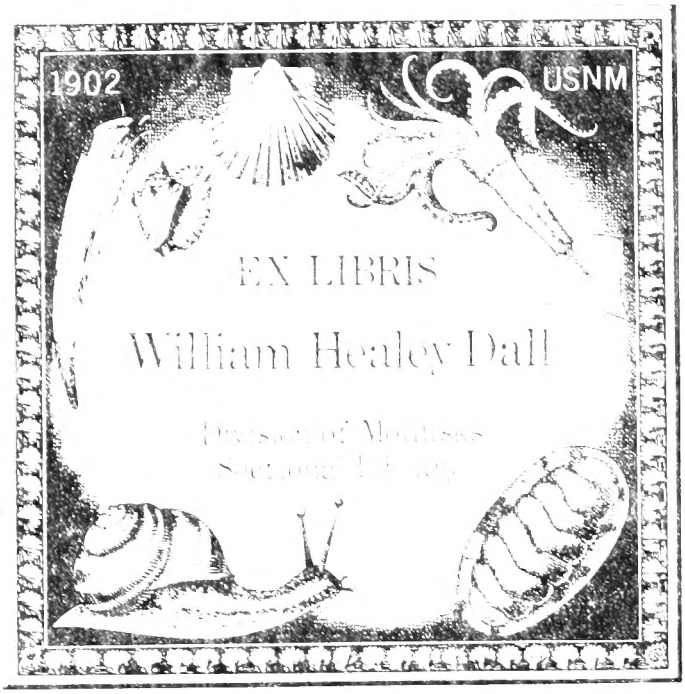
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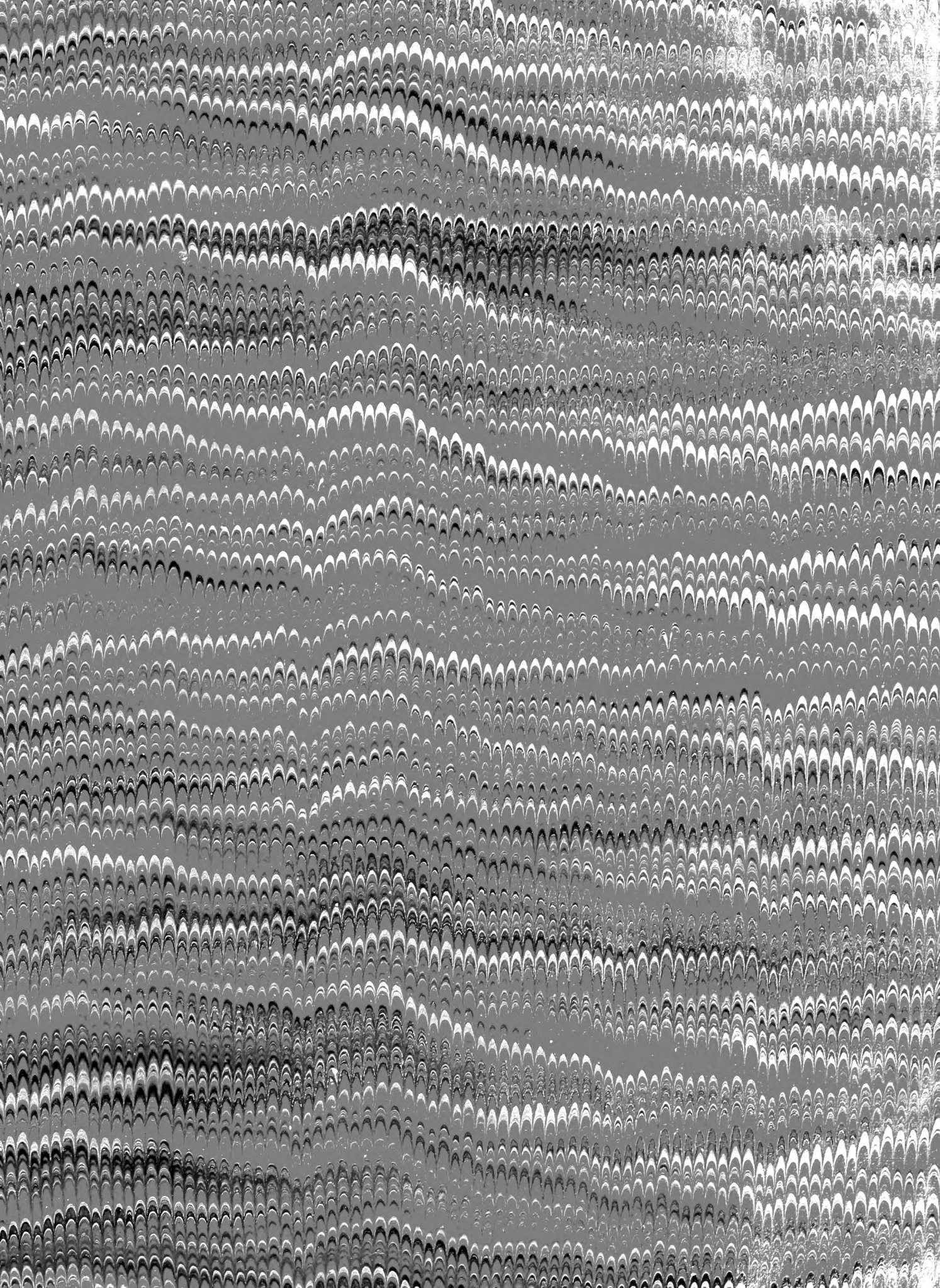

A SYNOPSIS

OF THE

FAMILY OF NAIADES.

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SECOND EDITION, ENLARGED AND IMPROVED.

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CONTENTS.

SYNOPSIS

OF

THE FAMILY OF NAIADES.

The following table of arrangement and synonymy was undertaken purely with the view and in the hope of clearing away the difficulties which had incumbered one of the most interesting families of the Mollusca. In this attempt the author met, while pursuing his task, with obstructions and difficulties which he little anticipated at its commencement. The want of some of the books of reference, and the confusion which reigned throughout many of them, sometimes presented obstacles which seemed almost insurmountable. In attempting to establish the synonymy, he has endeavoured to render the strictest justice, and if in any case it is found he has failed to do this, it will be a matter of sincere regret to him.

In the following tables there will be found in the family 323 recent species as admitted, 29 unknown to me or doubtful, and 22 fossil; in all 374.

Of the subgenus *Unio*, there are 235 species in a recent state, and 20 which I have not been able to admit as certain; of fossil species 21.

Of the subgenus *Margaritana* there are 20 admitted species, and 2 which are unknown to me.

Of the subgenus *Dipsas* I know of but 2 species, both of which are recent.

Of the subgenus *Anodonta* there are 58 admitted species, and 7 which are unknown to me. Of fossil species there is one which is doubtful.

The subgenus *Iridina* has 2 species, both recent.

The subgenus *Spatha* has 6 species, all recent.

Most of the distinguished authors who have written on the subject of the division of the Family *Naïades* of Lamarck, have acknowledged the extreme difficulty they have encountered in separating it into subdivisions. This difficulty is not peculiar to the *Naïades*. In most of the families where a great number of species have been observed, we find these species so merging, and in some of their characters so fading away into each other, that we scarcely know how, indeed in some instances it is impossible, to make the separation with precision. "Natura non facit saltum." In the vegetable kingdom the same obstructions to a system are encountered. The observations of Lindley* are so just and philosophic, that I cannot refrain from quoting them here:—

"Species are created by Nature herself, and remain always the same, in whatever manner they may be combined: they form the basis of all classification, and are the only part of it which can be considered absolute. For although in a natural system, all other combinations, whether genera, tribes, orders, or by whatever name they may be known, comprehend species agreeing much more with each other than with any thing else, and having a positive general resemblance in the majority of their features, yet no fixed limits can be assigned to any of

* See Introd. to Botany, p. 307.

them; on the contrary, they pass, by means of various intermediate species, into the other genera, tribes, orders, &c., to which they are most nearly allied. For this reason, viz., that no fixed limits can be assigned to orders, genera, &c., we find the ideas about them fluctuating with the degree of our knowledge; which is the true cause of those changes in the limits of genera, &c., which persons unacquainted with the subject are apt to consider arbitrary; but which, in skilful hands, are dependent upon a progressive advance in the knowledge of science."

Blainville, in his "Manuel de Malacologie," divides the *Naïades* (his *Sub-Mytilacea*) into *Anodonta* and *Unio*, but thinks that species will be found which will make these to be united.*

Sowerby says, "the difficulty of ascertaining to which genus of Lamarckian *Naïades* certain species belong, arises from the very general similarity of form," &c.; "in fact, an examination of a sufficient number of species will prove that no dependence can be placed upon the characters by which authors usually attempt to discriminate between these genera, and that the transition from one to another is so gradual in some instances, and so strongly marked in others, that it is not surprising that authors who having only met with certain species, and not being aware of such intermediate links, should have considered them as the types of new genera."† And further, "we think we have already said enough to prove, that unless it be thought wise to elevate each of the peculiar sorts we have mentioned, and many more, into distinct genera, it will be positively necessary to unite them altogether under one generic appellation." Swainson (Zool. Illus., second series) divides this family into *Unio*, *Hyria*, *Iridina*, *Anodon*, and *Alasmodon*, but in describing *An. areolatus* speaks of the genera gliding into each other.

Deshayes, in his edition of Lamarck's "Animaux sans Vertebres," says it is impossible to separate the genera of the *Naïades*. "Nous pourrions prendre pour exemple celui des genres qui est consideré comme l'un des mieux caractérisés. Le genre *Symphynote* est fondé sur ce caractere remarkable que les deux valves sont soudées entre elles le long du bord superieur," etc. "Nous concluons que tout ce grand

* See page 540.

† Zool. Journ. Vol. I.

ensemble ne peut et ne doit former qu'un seul genre constituent a lui seul la famille des *Nayades.*"*

It might be expected that some attempt of the application of M'Leay's circular system should be made in regard to this family. Swainson says that "the progression of every natural series is in a circle."† In my attempts to verify this, I have not been successful. That the same idea exists in the construction of species is evident through a great number, but that this idea is returned to the point at which it commenced I am not prepared to admit.

To form a systematic, and, so far as possible, a natural arrangement of this family, has long occupied my serious attention.

I was, from my first knowledge of the family, struck with the very different aspect of the winged species, and, taking the hint of Lamarck,‡ I thought that an important division could be made by separating the connate from the free shells, and proposed the name of *Symphynota* for such as were connate. I was not satisfied at that time in separating a genus of this family by a character differing from that of the teeth, but presumed that the family would be taken up by some one, if not by myself, and that the first division of it would be symphynote and non-symphynote *Naïades.* The numerous new species which have been made known since, have satisfied me that this character cannot be so extensively and usefully applied as I then thought it could, and that it is not in fact free from the same objection which pervades so many generic characters as adopted by the most intelligent naturalists, viz. that perfect fading and mingling of character which interferes with all the systems yet formed.

* Vol. VI. p. 526.—I will be excused in taking this opportunity to correct an erroneous impression on the mind of M. Deshayes. He says that I was not able to examine the collection of the Museum of Paris. "Malgré cette imperfection qu'il ne pouvait empêcher, le travail de M. Lea se recommende à l'attention des naturalistes par ces observations judicieuses, des descriptions exactes," etc. It would be strange, indeed, if after spending so many years in the study of this family, that I should neglect, while in Paris, to see the collections from which Lamarck made so many descriptions. I was frequently at the museum, and on one particular occasion, by appointment of MM. Blainville and Ferussac, arranged, in the presence of these and other gentlemen, all the species of the *Naïades* that were in the museum, and named them; and also presented to the museum about fifteen species which were new to that great national institution. I also did the same thing for Baron Ferussac, having designated every specimen in his cabinet belonging to this family.

† Swainson, in Lard. Cycl. Nat. Hist. p. 247.

‡ Vol. VI. p. 76.

Sowerby, after examining into the propriety of dividing the family into genera, came to the conclusion of keeping but one genus, viz. *Unio:* this he divided into A without teeth, B with teeth. These he subdivided into winged and not winged. Another subdivision followed these, on the presence, form, and absence of teeth. There is evidently much merit in this division; but it is not perfect; nor ought we to expect perfection, I believe, in any system. Ferussac informed me, when in Paris, that he proposed to consider the Family *Naïades* to consist of one genus, *Margaritifera*, which genus he divides into the following subgenera: 1. *Anodonta;* 2. *Iridina;* 3. *Dipsas;* 4. *Triquetra;** 5. *Alasmodonta*; 6. *Unio.*

In Vol. 3 of our Trans. p. 398, Mr Nicklin expresses the opinion "that the seven genera, now referred to the family of *Naïades*, are founded in artificial distinctions, and not in nature; and that in fact the family contains but one genus."

After mature reflection, I have come to the conclusion, in forming this systematic arrangement and catalogue, to divide the family into two genera, *Margarita* and *Platiris*, and both of these into *subgenera.* Under this system, the best place for the symphynote shells would be a division of the subgenera into Symphynote and Non-Symphynote.

* Klein. This it would appear Baron F. intended should embrace my genus *Symphynota*, as he included all he knew of them except *S. bialata.*

- FAMILY NAIADES.
  - I. GENUS MARGARITA.
    - 1. Subgenus Unio, — Having a cardinal and lateral tooth.
      - Symphynote—Unio alatus,[a] &c.
      - Non-Symphynote—U. pictorum,[b] &c.
    - 2. Subgenus Margaritana, — Having one tooth (cardinal).
      - Symphynote—Alas. complanata,[c] &c.
      - Non-Symphynote—Alas. undulata,[d] &c.
    - 3. Subgenus Dipsas, — Having a linear tooth under the dorsal margin.
      - Symphynote—Dipsas plicatus.[e]
    - 4. Subgenus Anodonta, — Having no teeth.
      - Symphynote—Sym. magnifica,[f] &c.
      - Non-Symphynote—An. fluviatilis,[g] &c.
  - II. GENUS PLATYRIS.
    - 1. Subgenus Iridina, — Having a crenulate dorsal margin.
      - Non-Symphynote—I. exotica.[h]
    - 2. Subgenus Spatha, — Having the dorsal margin non-crenulate.
      - Non-Symphynote—I. Niloticа.[i]

After the divisions of Symphynote and Non-Symphynote shells, we have what appears to me four very natural subdivisions, viz.

a Of Say.
b Of Lamarck.
c Of Barnes.
d Of Say.
e Of Leach. Only two species yet known, this and *S. discoidea*, Lea.
f Lea.
g *Mytilus fluviatilis*, Sol., Dill. &c. *An. cataracta*, Say.
h Of Lamarck.
i Of Sowerby.

1. Plicate shells.*
2. Nodulous shells.†
3. Spinous shells.‡
4. Smooth shells.§

Each of these subdivisions may be again separated, according to the form of their outline, thus:

1. Quadrate.[a]
2. Triangular.[b]
3. Oblique.[c]
4. Oval.[d]
5. Oblong.[e]
6. Subrotund.[f]
7. Wide.[g]
8. Obovate.[h]
9. Arcuate.[i]

The shell is supposed to be lying on its side with the ligament furthest removed from the observer, and the beak to the right of it. The base will of course be nearest to him, and the anterior margin to his right, while the posterior margin will be to the left. This is my mode of arranging my whole cabinet, which contains over 2100 specimens of this family, each differing in some character or locality.

In attempting to make a complete synopsis of the *Naïades*, much labour has necessarily been expended. I do not present this as a perfect work, but it has been made as much so as the opportunities in my possession permitted. Errors may have arisen from two sources: first, default of judgment; second, from accident, owing to the mass of research necessary to accomplish the object, considering the crude state

* As Unio plicatus. *Lesueur.*
† As Unio pustulosus. *Lea.*
‡ As Unio spinosus. *Lea.*
§ As Unio complanatus. (U. purpureus. *Say.*)
No regard of course is paid in this division to the folds or undulations of the beaks, as all the species are more or less disposed to this character.
[a] As U. asperrimus. *Lea.*
[b] As U. triangularis. *Barnes.*
[c] As U. clavatus. *Lam.*
[d] As U. crassus. *Say.*
[e] As U. complanatus. *Solander.*
[f] As U. circulus. *Lea.*
[g] As U. rectus. *Lam.*
[h] As U. modioliformis. *Lea.*
[i] As M. margaritifera. (Al. arcuata. *Barnes.*)

the subject was in. I shall be most agreeably disappointed if there be not parts pointed out as erroneous which are substantially correct. It will be observed that the works of M. Rafinesque are but little quoted. This has arisen from the utter impossibility of satisfying myself as to his species, causing me at an early period to abandon the task of making out his very imperfect descriptions. His own discrepancy in the names sent to Ferussac,* and those which are attached to specimens here, together with the want of accordance in the tables made out by his friends, have induced me to regard his claims as being too slender to rely upon the decisions, so contradictory, of the several parties, in the absence of the individual specimens noted. In the absence of these specimens, which no naturalist has, I believe, ever seen but the Professor, I feel myself compelled to prefer other authorities, which are now almost universally received by our men of science. I am the more fortified in this conclusion, when I see that his most ardent advocate acknowledges that he has made six species from a single one ;† and the absurdity is still stronger when we turn to Professor R.'s monograph, and find that this single species has furnished *several genera*, and is placed in fact in *two different sub-families!!!*

In regard to the Catalogue published last year by Baron Ferussac, in which he gives precedence to many of Professor Rafinesque's names, it must be remembered that this has been done on the authority of others, and not from the inspection of the subjects themselves. Had he known the manner in which these claims had been brought forward, he certainly would have admitted them with doubt.

* "Les erreurs involuntaires qui échappent à M. Rafinesque dans ses envois augmentent aussi la difficulté de reconnaitre ses espèces. Nous avons reçu de lui les mémes coquilles sous différents noms, et d'autres avec les noms évidemment autres que ceux qu'elles portent dans sa Monographie. Il en est résulté une difficulté inextricable pour la détermination de ses espèces, et pour pouvoir établir une synonymie exacte entre lui et les autres qui, depuis, se sont occupés des Mulettes."—*Magasin de Zoologie*, p. 13.

† Conrad's Synoptical Table on New Fresh Water Shells of the United States, p. 72. *U. triangularis.*

FAMILY NAIADES.—*Lamarck.*

GENUS MARGARITA.

I. SUBGENUS UNIO.

SYMPHYNOTE UNIONES.

PLICATE.

TRIANGULAR.

*angulatus. *Lea.*†
Hyria corrugata.‡ *Lam. Sow.*
Mya angulata. *Wood.*
Unio corrugata. *Blain.*
Unio rugosus. *Wagner.*§
Paxyodon ponderosus. *Schum.*
Triplodon rugosus. *Spix.*§

gigas. *Lea.*
Lymnadia gigas. *Swain.*

SMOOTH.

*inflatus. *Lea.*
Symph. inflata. *Lea,* in Trans. Am. P. S.

*alatus. *Say.*
Unio alatus. *Say. Lam. Swain. Bar. Hild.*
Mya alata. *Wood.*
Symph. alata. *Lea,* Trans. Am. P. S.

*syrmatophorus. *Lea.*
Mya syrmatophora. *Gronovius. Gmel. Wood. Dill.*

SYMPHYNOTE UNIONES.

SMOOTH.

TRIANGULAR.

Hyria avicularis. *Lam. Crouch.*
Hyria syrmatophora. *Sow.*
Hyria elongata?‖ *Swain.*
Unio caudatus.§ *Wagner.*
Prisodon obliquus. *Schum.*
Prisodon truncatus. *Schum.*
Diplodon furcatum.§ *Spix.*

*Brownianus. *Lea.*

*lævissimus. *Lea.*
Symph. lævissima. *Lea,* in Trans. Am. P. S. *Eaton.*
Unio lævissima. *Deshayes.*

*gracilis. *Barnes. Hild.*
Unio planus. *Barnes.*
Unio fragilis. *Swain.*
Symph. gracilis. *Lea,* in Trans. Am. P. S. *Eaton.*

*compressus. *Lea.*
Symph. compressa. *Lea,* in Trans. Am. P. S.

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* All the species preceded by an * are in my Cabinet. The inner column forms the Synonyms.

† It will be observed, throughout this *Synopsis*, that where any change has been made of generic or specific names, that I have placed my name there. This is not done with a view to claim any merit, but in accordance with that which is usually done. The object is to show the author of the change, and nothing further.

‡ This specific name having been used by the older conchologists, as well as Lamarck, for a shell from India (*Unio corrugata*), it becomes necessary, as I retain that as the older, to change this, which I do to Wood's name.

§ On the authority of Ferussac.

‖ Mr Gray thinks this to be a "perfectly distinct species." I have never seen the shell, and feel too much in doubt to insert it as such.

NON-SYMPHYNOTE UNIONES. PLICATE.

QUADRATE.

*Nicklinianus.† *Lea.*

*cœlatus. *Con.*

*multiplicatus.‡ *Lea.*
Unio heros. *Say*, in Disseminator.
Unio undulatus. *Say*, Am. Conch. No. 2. *Deshayes.*
Unio heros. *Say*, Am. Conch. No. 6.

*undulatus. *Bar. Valen. Hild. Desh.*
Unio costata? *Raf.*
Unio costatus. *Con.*

*plicatus. *Lesueur. Say. Bar. Eat. Hild.*
Unio Peruviana. *Lam.*
Unio rariplicata. *Lam.*
Unio Dombeyanus. *Valen.*
Unio undulata. *Desh.*
Unio multiplicata. *Desh.*

*trapezoides. *Lea.*
Unio crassidens. *Lam. Var. a.*
Unio interruptus.§ *Say.*

TRIANGULAR.

*ambiguus. *Lea.*
Castalia ambigua. *Lam. D'Orb.*
Unio ambigua. *Blain. Desh. Sow.*
Mya ambigua. *Wood.*
Tetraplodon pectinatum. *Spix.*

NON-SYMPHYNOTE UNIONES. PLICATE.

TRIANGULAR.

Cast. quadrilatera.‖ *D'Orb.*
Cast. inflata. *D'Orb.*

*foliatus.¶ *Hild.*
Unio flexuosa? *Raf.*
Unio flexuosus. *Con.*, in text, Monograph, page 8.
Unio foliatus. *Con.*, in plate 4, Monograph.

OVAL.

*pliciferus. *Lea.*

WIDE.

*multistriatus. *Lea. D'Orb.*
Diplodon ellipticum? *Spix.*

*subtentus. *Say. Con.*

*Conradicus. *Lea.*

*acutissimus. *Lea.*

*Murchisonianus. *Lea.*
Unio Douglasiæ. *Gray.*

*Grayanus. *Lea.*

ARCUATE.

ponderosus. *Lea.*
Mya ponderosa. *Solan. Dill.*
Mya crassa. *Wood.*

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† This distinct and beautiful species was described from a single valve not entirely perfect. When the whole shall be found perfect, I think it likely to prove symphynote.

‡ When I described the *multiplicatus* in 1830, I had had several specimens for two or three years, and was not aware that Mr Say had published a shell under the name of *heros*, which he subsequently abandoned as the *undulatus* of Barnes; but in 1834 reclaimed as *heros*. I consider that Mr Say's abandonment of the species entitles me to it, if my previous claim be not sufficient.

§ Mr Say, in his "Synonymy," claims precedence in this species, although my Memoir bears date May 1830, while his is December 1831. (See Transylvania Journal, Vol. V.) The reader will not after this be surprised to be told that Mr Say does not allow me, in his very incorrect "Synonymy," to be the discoverer of *a single new species* of Unio from our western waters!! I may be allowed also to state, that I do not understand why he gives the same name to two of his different numbers: thus, he calls No. 17, *U. interruptus*, Rafin.; and No. 47, *U. interruptus*, Say. The species are evidently distinct.

‖ I owe to the kindness of M. D'Orbigny specimens of this and *inflata*. I regret, however, that I am compelled to differ in opinion with this distinguished naturalist, believing, as I do, that there has been as yet observed but one species of Lamarck's *Castalia*.

¶ The male of *foliatus* is certainly a triangular shell—the female differs in form very much, having a deep

NON-SYMPHYNOTE UNIONES.

NODULOUS.

QUADRATE.

*lacrymosus.† *Lea.*

*asperrimus.‡ *Lea.*
Unio quadrulus. *Say.*

*fragosus.§ *Con.*

Phillipsii. *Con.*

*pustulatus. *Lea.*

*Schoolcraftensis. *Lea.*
Unio prasinus. *Con.*

TRIANGULAR.

*apiculatus. *Say.*

*asper. *Lea.*

*Dorfeuillianus. *Lea.*

*stapes. *Lea.*

*metanever. *Lea.*
Unio metanevra. *Raf.*
Unio nodosus. *Bar.*
Unio rugosus (Flat). *Bar.*
Unio metanevrus. *Con.*

NON-SYMPHYNOTE UNIONES.

NODULOUS.

TRIANGULAR.

*cornutus. *Bar.*
Unio reflexa? *Raf.*
Unio reflexus. *Con.*

SUBROTUND.

*pustulosus. *Lea.*
Unio verrucosus. *Bar.* *Var. b.*
Unio verrucosa. *Valen.*
Unio verrucosus albus. *Say;* but not of *Hildreth.*‖

*turgidus. *Lea.*
Unio Mortoni. *Con.*

*Cooperianus. *Lea.*

*verrucosus. *Bar.* *Eat.*
Unio tuberculata? *Raf.*
Unio tuberculosa. *Valen.*
Unio verrucosus purpureus. *Hild.*
Unio tuberculatus. *Con.*

*graniferus. *Lea.*

*nodulosus. *Lea.*
Mya nodulosa.¶ *Wood.* *Dill.*

*irroratus. *Lea.* *Eaton.*
Unio verrucosus albus. *Hild.*

---

inflection on the posterior basal margin. It may be doubted if this should be considered a plicate shell. I consider that the folds of the growth, particularly in the male shells, require it to be placed here.

† It is a matter of some doubt if this be more than a beautiful variety of *asperrimus* (nobis). Future observation must determine. Ferussac and some other zoologists believe it to be distinct. Dr Ward says they "are certainly distinct."

‡ Mr Say supposed this to be the *rugosus*, Barnes. Two specimens referred to by Mr B. as *rugosus* were under my inspection, and proved to be—the one a flat *metanevra*, Rafin., the other a *plicatus* (Lesueur). Mr B. in his reclamation recognises his *rugosus* as *U. Peruviana*, Lam., which shell is undoubtedly the *plicatus*, (Lesueur and Say).

§ This shell has been considered the female of *asperrimus* (nobis), but I am, after the examination of many specimens, disposed to think it to be distinct. Some of our best western naturalists think it to be the true *rugosus* of Barnes.

‖ A specimen sent to me by Dr Hildreth as *Unio verrucosus albus*, proved to be a true *irroratus* (nobis).

¶ This shell, as figured by Wood in his "General Conchology," seems to me to be distinct from the *pustulosus* (nobis), with which it has been confounded. The figure of Wood is longer than any *pustulosus* I have seen, and the epidermis is much darker ("bottle green"). The nodules are more numerous about the beaks, and the lateral tooth is longer and thicker. I doubt if the *nodulosus* be an American species.

NON-SYMPHYNOTE UNIONES.

NODULOUS.

SUBROTUND.

*dromas. *Lea.*

OBLIQUE.

*Æsopus. *Green.*
Unio cicatricosus. *Con.*; not of *Say.*
Unio varicosus. *Con.*; not of *Lea.*

*varicosus. *Lea.*
Unio cicatricosus? *Say.*†

*perplexus. *Lea.*
Unio gibbosus? *Raf.*
Unio gibbosus. *Con.*

WIDE.

*Leaii. *Gray.*

*granosus. *Brug. Lam.*

*tuberculatus. *Bar. Eat. Hild.*

Novæ Hollandiæ. *Gray.*

*cylindricus. *Say. Eat. Hild.*
Unio naviformis. *Lam. Blain. Valen.*

NON-SYMPHYNOTE UNIONES.

SPINOUS.

WIDE.

*spinosus. *Lea.*

SMOOTH.

QUADRATE.

*arcæformis. *Lea.*
Unio nexus.‡ *Say.*

TRIANGULAR.

*triangularis. *Bar. Eat. Hild. Say.*
Unio formosus.§ *Lea.* (Male.)
Unio cuneatus. *Swain.*

*elegans.‖ *Lea.*

*donaciformis.¶ *Lea.*

*zigzag. *Lea. Eat.*

*heterodon. *Lea.*

*penitus.†† *Con.*

*securis. *Lea. Eat.*
Unio depressa.‡‡ *Raf.*; but not of *Lam.*

---

† Never having seen the specimen described by Mr Say as *cicatricosus*, I am unable to decide if it be the same with *varicosus* (nobis). Two things mentioned by Mr Say induce me to doubt it. He calls his "a common species," and says it is "distinguishable by the single series of transverse elevations on the middle." The latter remark does not apply to *varicosus*, and I have always deemed it a rare shell.

‡ Say and Conrad both commit the error of giving precedence to *nexus*. My description of *arcæformis* is in my memoir, read before the American Philosophical Society May 20, 1831, while Mr Say's was first described in the Transylvania Journal of December 1831. Subsequently he republished it in his American Conchology, No. 6, where he places erroneously the date of 1832 to my memoir.

§ Mr Barnes's description of *triangularis* was made from a female shell, and mine of *formosus* from the male. There being an obvious distinction of the sexes in every specimen, my error was a very natural one, as we were not at the time acquainted with the sexual differences in the *Naïades*.

‖ Mr Say thinks that Mr Barnes's *undulatus*, Var. *a*, is the same with *elegans*. I think differently, and would fortify my opinion in the fact, that Mr B. does not mention the zigzag rays which are strikingly singular in the *elegans*, and could not have failed to have elicited his remarks had it been under his eyes.

¶ I have expressed my doubts, Transactions of the American Philosophical Society, Vol. IV., page 84, (page 94 in "Observations on the Genus Unio," &c.,) if this be more than a fine variety of *zigzag* (nobis). Mr Say gives it as a synonym to *nervosus*, Raf., and Mr Conrad as *truncata*, Raf.

†† I received from Judge Tait of Alabama, in 1830, several specimens of this species, but they were not sufficiently perfect to induce me to publish them. Mr Conrad does not mention the rays, a very peculiar character of which is their being dotted somewhat like those of *securis* (nobis), but in a lighter manner.

‡‡ Mr Conrad makes *depressa*, Raf., *ellipsaria*, Raf., and *securis* (nobis), synonymous with *lineolata*,

NON-SYMPHYNOTE UNIONES.

SMOOTH.

TRIANGULAR.

*camelus. *Lea.*

*ovatus. *Say. Lam. Bar. Valen. Eat. Hild. Con.*
Unio ventricosus. *Desh.*
Unio subovatus. *Desh.*
Unio occidens. *Desh.*

*subovatus.† *Lea.*

*crassidens.‡ *Lam.*
Unio cuneatus. *Bar. Eat. Hild.*
Unio niger? *Raf.*
Unio niger. *Con.*

*carbonarius. *Lea.*

*gibber. *Lea.*

*pumilis. *Lea.*

*rubiginosus. *Lea.*

*Barnesianus. *Lea.*

NON-SYMPHYNOTE UNIONES.

SMOOTH.

TRIANGULAR.

*pileus. *Lea.*

*Sowerbianus. *Lea.*

*trigonus. *Lea.*

*solidus. *Lea.*

*obliquus. *Lam.*
Unio undatus. *Bar.*
Unio trigonus.§ *Say* and *Con.*; not of *Lea.*
Unio mytiloides. *Eat.*
Unio undulatus. *Desh.*
Unio cordatus? *Raf.*
Unio cordatus. *Con.*

*pyramidatus. *Lea.*
Unio rubra? *Raf.*
Unio mytiloides. *Con.*

*mytiloides.‖ *Raf.*
Mya obliqua. *Wood.*

Raf. Mr Say does the same, with the exception of *ellipsaria*, which he considers distinct; while Mr Rafinesque himself places *lineolata* and *ellipsaria* in different subgenera!!

† Mr Say makes "*ventricosus*, Bar., *occidens* (nobis), *subovatus* (nobis), (var.), and *capax*, Green, (var.)," synonymous with *cardium*, Raf. In my opinion they form at least three, perhaps four distinct species.

‡ *Crassidens*, Var. *a*, Lam., is *trapezoides* (nobis).

§ Say and Conrad both give *trigonus* (nobis) as a synonym to *undatus*, Barnes. It is difficult for me to understand why they should not at once on comparison be recognised as different species. The *trigonus* is always more angular on the umbonial slope, and the undulations at the tips of the beaks differ. This may be observed particularly in the young and perfect specimens. If a doubt could be admitted as to the difference of the form of the shell, the colour of the animal in *trigonus* would at once settle the question. It is peculiar, and differs from all the species I know in being of so deep a colour as to be almost red.

Some years since, when I described this species, I deposited a specimen in the Academy of Natural Sciences of this city, with its proper name appended. Subsequently, I found the Academy had prefixed the name of *undatus*, Barnes, to the label, and I presume this error is still continued there.

‖ It is a matter of great doubt if this name ought to be admitted at all in this table. It was applied many years since, by the naturalists of this city, without reference to any particular specimen, but, as it now appears nearly certain, incorrectly. Dr Ward says the description and outline would "equally well apply to six or eight different species." The difficulty of recognising Mr Rafinesque's species is well illustrated in this one. Mr Conrad considers *triangularis*, Raf., as the type, and gives the following names of the same author as synonyms, viz. *lateralis*, *sintoxia*, *pachostea*, *mytiloides*, and *rubra*; thus charging him with making six species of one. But what is still more extraordinary, this single species, (agreeably to Mr Conrad's synonyms) is not only divided by Mr R. into *different subgenera*, but into *different genera*, and even into two DIFFERENT SUB-

NON-SYMPHYNOTE UNIONES. — SMOOTH. — OBLIQUE.

*Troostensis. *Lea.*
Unio trabalis. *Con.*

*Tigris. *Fer.*

*Taitianus. *Lea.*

cor. *Con.*

truncatus. *Swain.*

*decisus. *Lea. Con.*

*clavus. *Lam. Con.*
Unio scalenia. *Raf.*
Unio modioliformis. *Say;* not of *Lea.*

*patulus. *Lea.*

*Ravenelianus.† *Lea.*

*Rangianus. *Lea.*

*sulcatus. *Lea. Eat. Say.*
Unio ridibundus. *Say. Eat.* (Female.)‡

*Haysianus. *Lea.*

*ellipsis.§ *Lea. Eat.*
Unio brevialis? *Sow.*

*castaneus. *Lea.*

NON-SYMPHYNOTE UNIONES. — SMOOTH. — OVAL.

*Tampicoensis. *Lea.*

*Lecontianus. *Lea.*

*perdix. *Lea.*

pectorosus. *Con.*

*ventricosus. *Bar.*

*occidens.‖ *Lea.*
Unio ventricosus. *Say.*

*dolabræformis. *Lea.*

*globosus. *Lea.*
Sym. globosa. *Lea*, Trans. Am. P. S.
Unio capax? *Green.*

*splendidus. *Lea.*

*ochraceus. *Say. Con.*
Sym. ochracea. *Lea.* Trans. Am. P. S.

*cariosus. *Say. Bar.*
Unio cariosa.¶ *Lam.*
Unio ovata. *Valen.*
Unio luteola. *Con.;* not of *Lam.*

FAMILIES!! See "New Fresh Water Shells of the United States," p. 72, and Mr Rafinesque's "Monographie." In Mr Say's "Synonymy," *triangularis*, Raf., is considered to be the same as *ellipsis* (nobis)!

† Mr Conrad has subsequently published a different species under this name.

‡ For some years I was satisfied that Mr Say's *ridibundus* was only a variety of *sulcatus* (nobis). There can now, however, scarcely be a doubt that it is the female of that species; but it must be remarked, that this serrated shell is usually found smaller than the other; a circumstance not common with the females of other species. Mr S. describes and figures *ridibundus* in No. 1 of "American Conchology," but does not insert it in his "Synonymy" in No. 6.

§ Mr Say in his "American Conchology," refigures this, and recognises my name. Subsequently, in his "Synonymy," he makes it a synonym of *triangularis*, Raf. Mr Conrad says it is *olivarius*, Raf.

‖ This and the preceding shell are so nearly allied, that it is a matter of doubt with me if it would not be preferable to unite them. Dr Ward thinks they are male and female. Subsequent examination may throw sufficient light upon them to decide with certainty. Among Mr Barnes's varieties of *ventricosus*, it is evident there are several distinct species.

¶ *U. cariosa*, Lam. (Var. 2,) is the Alas. *marginata*, Say.

NON-SYMPHYNOTE UNIONES.

SMOOTH.

OVAL.

perovatus. *Con.*

altilis. *Con.*

*multiradiatus. *Lea.*
Unio fasciola? *Raf.*
Unio fasciolus. *Con.*
Unio ligamentina. *Desh.*

*Novi-Eboraci. *Lea.*

perovalis. *Con.*

*capsæformis. *Lea.*

Greenii. *Con.*

*pictus. *Lea.*

tæniatus. *Con.*

*interruptus. *Lea.*

*Menkianus. *Lea.*

*venustus. *Lea.*

*crassus. *Say. Bar.*†
Unio ellipticus. *Bar.*
Unio carinatus. *Bar.*
Unio ligamentina. *Lam.*

NON-SYMPHYNOTE UNIONES.

SMOOTH.

OVAL.

Mya gravis. *Wood.*
Unio fasciatus. *Con.*‡

*orbiculatus. *Hild.*
Unio abruptus.§ *Say.*
Unio crassus. *Con.*

australis. *Lam.*

*Hydianus. *Lea.*

*Claibornensis. *Lea.*

*luteolus. *Lam.*
Unio siliquoideus.‖ *Bar. Con.*
Unio inflatus. *Bar.*

Childreni.¶ *Gray.*

pulcher. *Lea.*

*radiatus. *Lam. Bar. Hild.*
Unio Virginiana. *Lam.*
Mya radiata. *Gmel. Wood. Dill.*
Mya oblongata. *Wood.*
Mya pictorum tenuis. *Chem.*

*Medellinus. *Lea.*

*notatus. *Lea.*

*Vanuxemensis. *Lea.*

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† Mr Barnes made eleven varieties of *crassus*; most of which were no doubt distinct species, some were plicate.

‡ Mr Conrad thinks the *crassus* of Say is *fasciata* of Mr Rafinesque. An examination of his description ought to satisfy any one that the *crassus* of Say could not have been under the eye of the author when he made his description of *fasciata*.

§ The specimen figured by Mr Say in Amer. Conch. No. 2, is a female shell. The male shell is not abrupt at the posterior margin.

‖ Mr Say makes *siliquoideus* the same with *viridis*, Raf. Ferussac, in his cabinet, makes it the same with *fasciata*, Raf. Mr Conrad makes it the same with *vittata*, Raf. Ferussac, in his "Observations," states the inextricable difficulty resulting from the confusion caused by Mr Rafinesque. See "Observations," p. 13, in Magazin de Zoologie.

¶ I have never seen this species, but presume, from the figure in Griffith's Cuvier, very poor as it evidently is, that it is a distinct species.

NON-SYMPHYNOTE UNIONES. — SMOOTH. — OVAL.

*Nashvillianus. *Lea.*

*Zeiglerianus. *Lea.*

lienosus. *Con.*

*obscurus. *Lea.*

*delodontus. *Lam.*
Unio lacteolus. *Lea. D'Orb.*

*charruanus.† *D'Orb.*

*lamellatus. *Lea.*

*Bengalensis. *Lea.*

*cœruleus. *Lea. Ben.*

*olivarius. *Lea. Ben.*

*Batavus. *Lam. Pfeif. Flem.*
Mya pictorum. *Chem. Schröeter. Monta.*
Mya ovalis.‡ *Soland.*
Mya Batava. *Wood. Maton. Dill.*
Mysca Batava. *Turton.*
Unio riparia. *Pfeif.*
Unio pictorum. *Drap.*, pl. 11, fig. 3.

NON-SYMPHYNOTE UNIONES. — SMOOTH. — OVAL.

Unio fusculus. *Mühl.*
Unio gibba. *Mühl. Pfeif.*
Unio Labacencis. *Mühl.*
Unio reniformis. *Schmidt.*
Unio fuscus. *Zeig.*
Unio consentaneus. *Zeig.*
Unio amnicus. *Zeig.*
Unio carynthiacus? *Zeig.*
Unio decurvatus. *Rossmaesler.*
Unio sinuatus. *Stud.*
Unio planus. *Stud.*
Unio ater.§ *Nil.*

*Cumberlandianus. *Lea.*

Smithii.‖ *Gray.*

vibex. *Con.*

*Mühlfeldianus. *Lea.*

*creperus. *Lea.*

*glaber. *Lea.*

*Hildrethianus.¶ *Lea.*
Al. ambigua? *Say.*

*fabalis.†† *Lea.*

† The two specimens sent to me by M. D'Orbigny are so like *delodontus*, that I am strongly induced to believe that they will prove to be the young of that species.

‡ On the authority of Dillwyn.

§ On the authority of Ferussac.

‖ Never having seen this shell, I place it here on the authority of Mr Gray.—See his figure in Griffith's Cuvier, Vol. XII.

¶ I retain this species among the *Uniones*, although it does not possess a perfect lateral tooth. As it is, however, thickened along the dorsal margin, and puts on the appearance of a tooth, I have concluded that it was better not to remove it to the Sub. Gen. *Margaritana*, to which it has little resemblance in its general characters. These observations may apply to *U. oriens* (nobis), and partially to *U. monodonta*, Say, (*U. soleniformis*, nobis.) Mr Say's description of *ambigua* answers well to *Hildrethianus*, but I am not sure it is the same, as he has given no figure of it. He seems to have abandoned it, as he does not insert it in his "Synonymy." Mr Conrad also avoids the insertion of it in his Synoptical Table.

†† Say and Conrad both in their catalogues give precedence to *lapillus*. *Fabalis* is in my Memoir read before the Am. Philos. Soc., May 7, 1830, and inserted in the Transactions; *capillus* was first inserted in the

NON-SYMPHYNOTE UNIONES. — SMOOTH.

OVAL.

Unio capillus. *Say*, Transylvania Journal, Vol. V.
U. lapillus. *Say*, Am. Conch. No. 5, *Con.*

*parvus. *Bar. Eat.*
Unio parvus. *Con.*

*glans.† *Lea.*

*divaricatus. *Lea.*

*faba. *D'Orb.*

*Burroughianus. *Lea. D'Orb.*

*discus. *Lea.*

*simus. *Lea.*

*corrugatus. *Lam.*
Mya corrugata. *Müller. Chem. Gmel. Wood. Dill.*
Mya rugosa. *Gmel. Wood. Dill.*

NON-SYMPHYNOTE UNIONES. — SMOOTH.

OVAL.

Mya nodosa? *Gmel. Wood. Dill.*
Mya spuria. *Gmel.*? *Wood.*
Unio spuria. *Lam.*
Unio triradiata. *In "Museum" at Paris.*

*Niloticus. *Fer. Caill.*
Mya pictorum. *Forkaël.*‡

*Egyptiacus.§ *Caill. Fer.*

OBLONG.

*brevidens. *Lea.*

tetralasmus. *Say.*

*camptodon.‖ *Say.*
Unio declivis.¶ *Con.*

*obesus.†† *Lea.*

*Hopetonensis. *Lea.*

*Roanokensis. *Lea.*

December number (1831) of the Transylvania Journal, and subsequently in the "Amer. Conch." No. 5, (Aug. 1832) under the name of *lapillus*. Mr Say does not mention why he changed the name on redescription. I should prefer the first, as a more descriptive name, were I to choose between the two.

† Mr Say doubts if the *glans* be not the same with *parvus*. I do not see how there can be any difficulty in distinguishing them. The *glans* is a much heavier shell, and the nacre of all the specimens I have seen is more or less purple, while that of *parvus* is always, I believe, white. Among many hundred specimens which have come under my notice, I have never seen one of any other colour. The texture of the nacre is also totally different, the latter being more pearly than any other of our *Uniones*. In the epidermis and beaks they also differ essentially.

‡ On the authority of Ferussac.

§ The specimen of this species which I received from M. Caillaud, the traveller, is so much like *Niloticus*, that I certainly would not myself have separated it.

‖ This fine shell, as well as the preceding one, both of which are Mr Say's, seem to have been overlooked in the formation of his catalogue. They are described in his Amer. Conchology. I have never seen the shell he calls *tetralasmus*,—they may possibly prove to be the same.

¶ The shell in the Academy of Nat. Sci., described and figured by Mr Conrad in his "Monography," page 45, as *declivis*, Say, I consider to be a middle aged *camptodon*, Say. This, however, is not the opinion of all our conchologists.

†† Ferussac believes that this is *Carolinianus* of Bosc. Not having seen the specimen described by Bosc, nor having access to his description, I am unable to decide. The fact, however, of Bosc's having visited Carolina some forty years since, renders it highly probable to be so. Ferussac gives his *trapezium* as a synonym to *Carolinianus*. In my table of the Uniones made in 1829, I considered *Carolinianus* as the *complanatus:* in which I was most likely wrong.

NON-SYMPHYNOTE UNIONES. — SMOOTH.

OBLONG.

*jejunus. Lea.

*complanatus. *Lea.*
- Mya complanata. *Soland. Dill.*
- Unio violaceus.† *Spangler.*
- Unio purpureus.‡ *Say. Bar.*
- Unio rarisulcata. *Lam.*
- Unio coarctata. *Lam.*
- Unio purpurascens. *Lam.*
- Unio rhombula. *Lam.*
- Unio carinifera. *Lam.*
- Unio Georgina. *Lam.*
- Unio glabrata. *Lam.*
- Unio sulcidens. *Lam.*
- Unio fluviatilis. *Green.*
- Mya rigida? *Wood.*

*Griffithianus. *Lea.*

*auratus. *Lea.*
- Niäa aurata. *Swain.*
- Unio obtusa.§ *Fer.*
- Unio depressus.§ *Less.*

*atratus. *Lea.*
- Niäa atrata. *Swain.*
- Niäa fragilis. *Swain.*

*confertus. *Lea.*

*paliatus. *Ravenel's Letter.*

Watereensis. *Lea.*
- Unio Raveneli.‖ *Con.*

NON-SYMPHYNOTE UNIONES. — SMOOTH.

OBLONG.

*fulvus. *Lea*
- Unio icterinus. *Con.*

*Congaræus. *Lea.*

*declivis. *Say.*
- Unio geometricus.¶ *Lea.*

*Blandingianus. *Lea.*

*depressus. *Lam. D'Orb.*

angustus. *Lam.*

*modestus. *Fer.*

*litoralis. *Lam. Pfeif. Des Moul. Grat.*
- Unio crassus. *Schr. Retz. Neil. Speng.*
- Unio rhomboidea. *Schr.*
- Unio brevialis. *Lam.*
- Unio semirugata. *Lam.*
- Unio nana. *Lam.*
- Unio subtetragona. *Mich.*
- Unio incurvus. *Lea.*
- Unio Pianensis. *Farines.*
- Unio granosus. *Schum.*
- Mysca ovata. *Turt.*
- Mya depressa. *Don.*

SUBROTUND.

*circulus. *Lea. Eat.*
- Mya rotunda? *Wood.*

*lens.†† *Lea.*

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† On the authority of Ferussac.

‡ Mr Conrad is wrong in his "Synoptical Table," in giving Mr Say's name precedence, making *complanatus* a synonym.

§ On the authority of D'Orbigny.

‖ Prof. Ravenel's name being previously used for a *Unio* (Amer. Phil. Soc. Trans., Vol. V.), it becomes necessary to change Mr Conrad's name, which I do, to that of the river in which it was found.

¶ I do not find either of these names in Mr Say's Synonymy. He has, however, priority.

†† I have some doubts whether this should be considered more than a variety of *circulus*. I am not, however, sure, that it is not distinct.

NON-SYMPHYNOTE UNIONES.

SMOOTH.

SUBROTUND.

rubellus. *Con.*

Masoni. *Con.*

*rotundatus. *Lam.*
Unio suborbiculata. *Lam. Blain.*
Unio glebulus.† *Say.*
Unio subglobosus. *Lea.*

*Paranensis. *Lea. D'Orb.*
Unio Solisiana. *D'Orb.*

membranacea.‡ *Lea.*
Myt. membranacea. *Mat.*
Myt. Matoniana. *D'Orb.*

variabilis. *Lea.*
Mya variabilis.§ *Mat. Wood. Dill.*
Unio rotundus. *Wag.*

*personatus. *Say.*
Unio capillaris. *Lea.*

*retusus. *Lam. Con.*
Unio torsa. *Raf. Eat.*

*ebenus. *Lea.*
Unio mytiloides. *Con.*; not *Raf.*

maculatus. *Con.*

NON-SYMPHYNOTE UNIONES.

SMOOTH.

SUBROTUND.

*Kirklandianus. *Lea.*

*subrotundus. *Lea.*
Unio politus? *Say.*
Unio brevialis? *Crouch.*

infucatus. *Con.*

*coccineus. *Lea.*
Unio coccineus. *Dr Hildreth's Letter.*
Unio coccineus. *Con.*
Unio catillus. *Con.*

WIDE.

*Shepardianus. *Lea.*

*folliculatus. *Lea.*

*rectus. *Lam. Eat.*
Unio prælongus. *Barn. Hild.*
Unio recta. *Valen.*
Unio Sageri?‖ *Con.*
Mya prælonga. *Wood.*

*dehiscens.¶ *Say.*
Unio oriens. *Lea.*

*angustatus. *Lea.*

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† Although Mr Say had published this shell in the Transylvania Journal, and in his Am. Conchology, he omitted it altogether in his "Synonymy." Other species are inserted from the vicinity of New Orleans.

‡ I formerly placed this with the Anodontæ, but D'Orbigny, who has seen the shell in its native waters, having placed it among the *Uniones*, I follow him, never myself having seen the shell. The figure of Dr Maton (Linn. Trans. Vol. X) is without teeth, and the text says expressly "cardo edentulus." Notwithstanding this, I am inclined to believe that D'Orbigny is right, for the form of the shell is such as I have not seen in the Anodontæ. Not knowing what induced M. D'Orbigny to change Dr Maton's name, I have restored it.

§ The figure of this shell in the Lin. Soc. Trans., Vol. X., although so much smaller a shell than *Paranensis* (nobis), is so much like it, that I should not be surprised if they should prove to be the same.

‖ Mr Conrad's figure so nearly resembles the male specimens of *U. rectus*, from Green Bay, in my cabinet, that I am persuaded the *Sageri* will not prove to be a distinct species. Drs Kirtland and Ward, and Judge Tappan, consider it a variety of *gibbosus* of Barnes.

¶ Mr Say gives Mr Rafinesque's name of *lata* precedence. Mr Eaton says that *An. lata*, Raf., is *Sym. tenuissima*, Lea.

NON-SYMPHYNOTE UNIONES.

SMOOTH.

WIDE.

*lanceolatus.† *Lea.*

*Anodontoides. *Lea.*
Unio teres? *Raf.*
Unio teres. *Con.*

*parallelopipedon. *Lea. D'Orb.*

*platyrhynchus.‡ *Rossmaesler.*

*Cailliaudii. *Fer.*

*ovalis. *Flem. Sow.*
Mytilus angustior.§ *List.*
Mya ovalis. *Monta.*
Mya ovata. *Don. Mat. Wood. Dill.*
Mya depressa. *Don.*
Mysca solida. *Turt.*
Unio nodulosa. *Lam.*
Unio tumida. *Retz. Pfeif. Nil.*
Unio Michaudiana? *Des Moul.*
Unio ovata. *Bouil.*
Unio rostrata. *Stud.*
Unio Limagnæ. *Bouil.*

*pictorum. *Lam. Pfeif. Drap. Blain. Crouch. Flem. Des Moul. Grat. Bouil.*
Mya pictorum. *Lin. Poli. Dill. Wood. Mat.*
Mya corrugata Maroccana.‖ *Chem.*
Long thick horse mussel. *Petiv.*

NON-SYMPHYNOTE UNIONES.

SMOOTH.

WIDE.

Mya angustata. *Schræt. Klein.*
Mysca pictorum. *Turt.*
Unio rostrata. *Lam. Pfeif. Mich. Desh. Bouil.*
Unio manca. *Lam.*
Unio elongatula. *Mühl.*
Unio Turtonii. *Payraud.*
Unio Capigliolo. *Payraud.*
Unio Requienii. *Mich.*
Unio Deshayesii. *Mich.*
Unio limosa. *Nil.*
Unio longirostris. *Zeigl.*
Unio Limovianscæ. *Fer.*

*elongatus. *Pfeif.*

productus. *Con.*

*nasutus. *Say. Barn. Swain.*
Unio rostratus. *Valen.*
Mya nasuta. *Wood.*
Unio subrostratus? *Say.*

*Fisherianus. *Lea.*

*Jayensis. *Lea.*

*lugubris. *Lea.*

*marginalis. *Lam.*
Unio anodontina. *Lam.*

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† M. Deshayes (2d edit. Lamarck) doubts if *lanceolatus* be not the young of *Anodontoides*. The first has been found only in the waters east of the Alleghany mountains, the last only in the western waters. There cannot be a doubt of their being distinct species. In size they differ altogether.

‡ This is a curious and very interesting new species which I recently received from Vienna. Its habitat is Carynthia.

§ On the authority of Fleming.

‖ Chemnitz figures this shell, Vol. VI. table 3, fig. 23 & 24. From the description and outline, I have little doubt of its being a young *pictorum*, more than usually undulated in the region of the beaks. Its being rugose over the whole surface, as mentioned by him, is not evidence against its being such. As the first growth subsequently forms the beak of the shell, it ought of course to be rugose, if that be the character of the shell. The inside view is without teeth, but this is doubtless the fault of the draftsman or engraver, as the author speaks of the hinge being like the common mussel.

NON-SYMPHYNOTE UNIONES.

SMOOTH.

WIDE.

*iris.† *Lea.*
Unio nebulosus. *Con.*

*tenuissimus. *Lea.*
Symp. tenuissima. *Lea,* in Trans. Am. P. S.
An. purpurascens. *Swain.*
Unio velum. *Say.*

*bilineatus. *Lea. Ben.*
Symp. bilineata. *Lea,* in Trans. Am. P. S.

*Corrianus. *Lea.*

*phaseolus. *Hild. Eat.*
Unio planulatus. *Lea.*
Unio cuneatus.‡ *Barn.* (White var.)

arcus. *Con.*

arctatus. *Con.*

*gibbosus. *Bar. Eat. Hild.*
Unio mucronatus. *Bar.*
Unio nasuta. *Lam.*
Unio dilatata? *Raf.*
Unio dilatatus. *Con.*

*arctior. *Lea.*

*Patagonicus. *D'Orb.*

NON-SYMPHYNOTE UNIONES.

SMOOTH.

WIDE.

*Vaughanianus. *Lea.*
Unio Carolinensis. *Prof. Ravenel's Letter.*

OBOVATE.

*purpuratus. *Lam.*
Mya ventricosa.§ *Solan. Humphreys?*
Unio ater. *Lea.*
Unio lugubris. *Say.*
Unio Poulsoni. *Con.*

rhombeus. *Wag.*
Diplodon rhombeum. *Spix.*

*cuprinus. *Lea.*
Unio metallicus.‖ *Say.*

*modioliformis. *Lea.*
Unio delumbis. *Con.*

*tenerus. *Rav.*
Unio tenebrosus. *Con.*

*Tappanianus. *Lea.*

*contradens. *Lea.*

stramineus. *Con.*

† Mr Say in his "Synonymy" gives *iris* as a synonym to his *subrostratus*. If they were the same I would be entitled to precedence, as my description bears date March 1829, while his is January 1831. His description, however, of *subrostratus* does not apply to my *iris*, and certainly this shell could not have been under his eye when his description was made. He says that the *subrostratus* "may be said to be the analogue of the *Unio nasutus* (nobis) of the western waters." As the *U. nasutus* inhabits the western waters, a variety of that species may have been described by him for *subrostratus*.

‡ In note to Dr Hildreth's Memoir on the shells in the vicinity of Marietta, Ohio, published in Silliman's Journal.

§ On the authority of Ferussac.

‖ Mr Say in his "Synonymy" claims precedence. My Memoir bears the date of May 7, 1830; his that of January 1, 1831.

NON-SYMPHYNOTE UNIONES. — SMOOTH. — ARCUATE.

*crassissimus. *Fer. Des Moul. Grat.*
Mya crassissima.† *Klein.*
Unio auricularis.† *Speng.*
Unio margaritacea. *Drap.*
Unio sinuata. *Lam. Blain. Pfeif. Desh.*
Unio rugosa.† *Poir. ?*

*monodontus. *Say. Eat.*
Unio soleniformis. *Lea.*

*emarginatus. *Lea.*

Being unacquainted with the following species, I have deemed it best simply to insert a list of them, with the hope of their being determined at a future period:—

Unio rubens. *Menke.*
Unio rugatus. *Menke.*
Unio Grœnlandicus.† *Schrö. Fer.*
Unio orientalis. *Fer.*
Unio nitidens. *Fer.*
Unio obtusus. *Fer.*
Unio preciosus. *Fer.*
Unio pulchellus. *Fer.*
Unio purpuriatus. *Say.*
Unio musivus.† *Speng.*
Unio gibbus.† *Speng.*
Unio truncatus.† *Speng.*
Unio oviformis. *Con.*
Unio furvus. *Con.*
Unio Juliani. *Rang.*
Unio psammoica. *D'Orb.*
Unio rhuacoica. *D'Orb.*
Unio Fontainiana. *D'Orb.*
Unio hylœa. *D'Orb.*
Unio Guaraniana. *D'Orb.*

The following species are supposed to exist in a fossil state. As the casts only are usually observed, it must be a matter of great doubt as to the propriety of making species where that is the case:—

Unio crassiusculus. *Sow. Flem.*
Unio concinnus. *Sow. Flem.*
Unio uniformis. *Sow. Flem.*
Unio acutus. *Sow. Flem.*
Unio Listeri. *Sow. Flem.*
Unio Solandri. *Sow. Flem.*
Unio porrectus. *Sow.*
Unio compressus. *Sow.*
Unio antiquus. *Sow.*
Unio aduncus. *Sow.*
Unio cordiformis. *Sow.*
Unio crassissimus.‡ *Sow. Flem.*
Unio subconstrictus. *Sow. Flem.*
Unio hybridus. *Sow. Flem.*
Unio Urii. *Flem.*
Unio abductus. *Phil.*
Unio peregrinus. *Phil.*
Unio petrosus. *Mort.*
Unio tumulatis. *Mort.*
Unio terrenus. *Mort.*
Unio saxulum. *Mort.*

II. SUBGENUS MARGARITANA.§

SYMPH. MARG. — PLICATE. — TRIANGULAR.

*complanata. *Lea.*
Alas. complanata. *Bar. Hild.*
Symp. complanata. *Lea,* Trans. Am. P. S.

† On the authority of Ferussac.

‡ This name is pre-occupied by Ferussac.

§ The genus *Margaritana* was proposed by Shumacher in his "Essai d'un Nouveau Système des Habitations des Vers Testacés," published in 1817, for the *Mya margaritifera*, Lin. (*Unio elongata*, Lam. and *Alasmodonta arcuata*, Bar.) Mr Say, in 1818, proposed to establish this same division under the generic name of *Alasmodonta*. The Danish zoologist having priority of date must have his name preferred, unless, as Mr Gray thinks, Leach's name of *Damalis* has priority of both. Unfortunately, I have not the means of referring to his description.

NON-SYMPHYNOTE MARGARITANÆ.

PLICATE.

QUADRATE.

*confragosa. *Lea.*
Alas. confragosa. *Say.*

TRIANGULAR.

*arcula. *Lea.*

OBLONG.

*marginata. *Lea.*
Alas. marginata. *Say. Bar.*
Alas. truncata.† *Say.*
Unio cariosa. (Var. 2.) *Lam.*
Unio varicosa. *Lam.*
Unio calceolus. *Say*, not of *Lea.*
Mya regulosa. *Wood.*

*rugosa. *Lea.*
Alas. rugosa. *Bar. Eat. Hild.*
Alas. abducta. *Say.*

SMOOTH.

TRIANGULAR.

*deltoidea. *Lea.*

*undulata. *Lea.*
Alas. undulata. *Say. Bar.*
Alas. sculptilis (young). *Say.*

NON-SYMPHYNOTE MARGARITANÆ.

SMOOTH.

TRIANGULAR.

Mya undulata. *Wood.*
Unio hians. *Valen.*
Unio glabratus. *Sow.*

OVAL.

*Raveneliana. *Lea.*

radiata.‡ *Lea.*
Alas. radiata. *Con.*

*calceola.§ *Lea.*
Unio calceolus. *Lea*, Trans. Am. P. S.
Alas. marginata.‖ *Say.*
Alas. truncata. *Con.*, not of *Say.*

OBOVATE.

*Bonellii. *Lea.*
Alas. Bonellii. *Fer.*
Unio depressa. *Pfeif. Mühl.*
Unio compressa. *Menke.*

*Paraguayana. *Lea.*
Monocondylœa. Paraguayana.¶ *D'Orb.*

---

† Several specimens of fine *marginata* have been sent to me from the west, marked *Alas. truncata*, Say, being one of his unpublished names, but given by him to various conchologists under that name. I have never considered it distinct from the *marginata* of the eastern rivers, although it is generally larger and of finer colour in the exterior.

‡ This shell, in the teeth, except in the size of them, very closely resembles the *An. areolatus*, Swain. which Mr Say described as *Alas. edentula.* Although in both these shells there is a small cardinal tooth, in all their other characters they so closely resemble the *Anodontæ*, that it is a matter of doubt with me as to the propriety of separating them. An examination of the animals, when satisfactorily dissected, may show the necessity of placing them both, notwithstanding their possessing small teeth, with the *Anodontæ.*

§ In my Memoir in the Trans. Am. Phil. Soc., Vol. III. page 420, (page 34 of "Observations on the Genus Unio,") I mention this shell as being closely allied to the genus *Alasmodonta* of Say. In this Synopsis I have deemed it better to transfer it to the subgenus *Margaritana*, as the lateral tooth is observable in very few individuals. Deshayes says it is between *Unio* and *Alasmodonta.*

‖ Mr Say in his "Synonymy" makes *calceolus* and *Alas. marginata* the same. I am surprised at this, as their characters, in many respects, are very different, and I have never heard it even suggested before that they could be confounded.

¶ D'Orbigny, the distinguished traveller in South America, forms the genus *Monocondylœa* for a group of shells which he has first observed, and which possess a single cardinal tooth. This tooth certainly differs from that of the *Margaritana fluviatilis*, Schum., *Alasmodonta*, Say; but for the present, at least, I prefer placing them in Schumacher's genus. The possession of one cardinal tooth, and the absence of a lateral one, is the distinguishing character of both of them. I am indebted to the great kindness of M. D'Orbigny for the first five—

NON-SYMPHYNOTE MARGARITANÆ.

SMOOTH.

OBOVATE.

*Parchappii. *Lea.*
Monoc. Parchappii. *D'Orb.*

*Corrientesensis. *Lea.*
Monoc. Corrientesensis. *D'Orb.*

*Guarayana. *Lea.*
Monoc. Guarayana. *D'Orb.*

*fossiculifera. *Lea.*
Monoc. fossiculifera. *D'Orb.*

Minuana. *Lea.*
Monoc. Minuana. *D'Orb.*

ARCUATE.

*margaritifera. *Lea.*
Mya margaritifera. *Lin. Chem. Knorr. Dill. Desh. Wood. Mat. Monta. Mühl. Retz. Nil.*
Margaritana fluviatilis. *Schum.*
Unio elongata. *Lam. Mich. Bouil.*
Unio sinuata. *Pfeif.*
Unio Roissyi. *Mich.*
Unio margaritiferus. *Pfeif. Drap. Turt.*
Unio rivalis. *Zeig.*
Alas. margaritiferum. *Flem.*
Alas. arcuata. *Bar.*

*Holstonia. *Lea.*

*fabula. *Lea.*

The following species are unknown to me :—
Alasmodonta Tripolitana. *Fer.*
Alasmodonta incurva. *Fer.*

III. SUBGENUS DIPSAS.

SYMPHYNOTE DIPSADES.

PLICATE.

TRIANGULAR.

*plicatus.† *Leach.*
Barbata plicata.‡ *Humph.*
Myt. plicatus. *Soland.*
Myt. dubius. *Gmel. Dill.*
Cristaria tuberculata. *Schum.*
An. dipsas. *Blain. Fer.*
An. tuberculatus. *Fer.*
An. alatus. *Sow.*
Symph. bi-alata. *Lea,* Trans. Am. P. S.
Unio bi-alata. *Desh.*

SMOOTH.

OVAL.

*discoideus.§ *Lea.*
Symp. discoidea. *Lea,* Trans. Am. P. S.
Unio tenuis. *Gray.*‖
An. tenuis. *Gray.*‖

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the sixth one I place here with some hesitation, as to its proper situation, never having seen it. It is certainly a most interesting group, and it is to be regretted that we have no description of the animal.

† Perfect specimens show the whole linear tooth, and the folds on the posterior slope and on the posterior wing, but old and imperfect specimens sometimes exhibit neither. The imperfect figure and description by Leach of this fine shell, led me to believe that it could not be the same with that which I described under the name of *Sym. bi-alata.*

‡ On the authority of Gray.

§ The posterior termination of the tooth shows some disposition to duplication, and evidently inclines to pass into the subgenus *Unio.*

‖ In Griffith's Cuvier.

IV. SUBGENUS ANODONTA.

SYMPHYNOTE ANODONTÆ.

SMOOTH.

TRIANGULAR.

*Wahlamatensis. *Lea.*

OVAL.

*magnifica. *Lea.*
Symp. magnifica. *Lea*, Trans. Am. P. S.

*Woodiana. *Lea.*
Symp. Woodiana. *Lea*, Trans. Am. P. S.

*Benedictensis. *Lea.*
Symp. Benedictensis. *Lea*, Trans. Am. P. S.

*Nuttalliana. *Lea.*

NON-SYMPH. ANODONTÆ.

PLICATE.

OBOVATE.

*crispata. *Lam.*

SMOOTH.

OVAL.

*cygnea.† *Drap. Lam. Crouch. Blain. Pfeif. Turt. Des Moul. Flem. Grat. Bouil.*

Myt. cygneus. *Gmel. Chem. Schrö. Dill. Mühl. Monta. Mat.‡ Shep. Tur.*

Myt. anatinus. *Gmel. Chem. Schrö. Schum. Wood. Monta. Tur. Dill. Mat.*

Myt. stagnalis. *Gmel. Bosc. Dill. Sow.*

Myt. fluviatilis.§ *Gmel.*

Myt. fucatus. *Dill.*

Myt. Zellensis. *Gmel. Schrö. Bosc.*

Myt. Avonensis. *Monta. Wood. Ed. Encyclopædia.*

Myt. radiatus.‖ *Mühl. Schrö.*

Myt. incrassatus. *Shep.*

Myt. macula. *Shep.*

An. anatina. *Lam. Dill. Drap. Sow. Pfeif. Flem. Grat. Des Moul. Bouil.*

An. sulcata. *Lam.*

An. dentiens. *Menke.*

An. intermedia. *Lam. Pfeif. Bouil.*

An. variabilis. (Var. b.) *Drap.*

An. cellensis. *Pfeif.*

An. ventricosa. *Pfeif.*

An. ponderosa.¶ *Pfeif.*

An. paludosus. *Tur.*

An. grossa. *Zeig.*

An. compressa?†† *Zeig.*

An. obvoluta?†† *Zeig.*

An. spuria. *Count Yoldi's Letter.*

An. proboscidalis. *Zeig.*

An. piscinalis. *Nil.*

NON-SYMPHYNOTE ANODONTÆ.

SMOOTH.

OVAL.

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† I have, after a good deal of consideration and examination of my specimens, and the figures in the numerous works describing the *Naïades*, satisfied myself that *An. cygnea* and *An. anatina* are not specifically distinct. If the observation of M. Poiret, that the first is viviparous and the last oviparous, be correct, then they should be certainly separated. I feel perfectly persuaded, however, that he must be in error. Turton, in his recent work on the Land and Fresh Water Shells of Great Britain, says he is "inclined to think that all our supposed species of this genus may be justly resolved into one."

‡ β of Maton and Racket (Lin. Soc. Trans., Vol. IV.) is evidently, judging from the figure, *Unio litoralis.*

§ Gmelin states this shell to be from the fresh waters of Europe, and allied to *Anatina.* If this be true, there cannot be a doubt of its being the same with *cygnea.* The *fluviatilis* of Solander and Dillwyn is said to be from North America, and is no doubt the *cataracta* of Say.

‖ On the authority of Dillwyn.

¶ This and the *grossa* are certainly very different in aspect from the *cygnea*, Lam., being more ponderous and less produced behind. This difference may, however, be effected by locality. Should it prove constant, *ponderosa* ought to be considered a distinct species, and I am much disposed to think that such will prove to be the fact.

†† On the authority of Ferussac.

NON-SYMPHYNOTE ANODONTÆ. — SMOOTH. — OVAL.

- Anodontites cygnea.† *Poir.*
- Anodontites anatina. *Poir.*
- *Oregonensis. *Lea.*
- *Pepiniana. *Lea.*
- *fragilis. *Lam.*
- uniopsis. *Lam.*
- Chaiziana.‡ *Rang.*
- *undulata. *Say.*
  - Anodon rugosus. *Swain.*
  - Anodonta Pennsylvanica. *Lam.*
- *Wardiana. *Lea.*
  - A. virgata. *Con.*
- *edentula. *Lea.*
  - Alas. edentula. *Say.*
  - Anodon. areolatus. *Swain. Coop.*
- *pavonia. *Lea.*
- *limnoica. *D'Orb.*
- trigona.§ *Spix.*
- purpurea. *Valen.*

NON-SYMPHYNOTE ANODONTÆ. — SMOOTH. — OVAL.

- *Ferussaciana. *Lea.*
- *salmonia. *Lea.*
- *incerta.‖ *Lea.*
  - imbecillis? *Say.*
- *Newtonensis. *Lea.*
- *fluviatilis. *Lea.*
  - Myt. fluviatilis.¶ *Soland. Dill. Wood.*
  - Myt. illitus. *Soland.*
  - An. cataracta. *Say.*
  - An. marginata. *Say.*
  - An. implicata? *Say.*
  - An. teres. *Con.*
- *Mortoniana. *Lea.*
  - An. Chiquitana. *D'Orb.*
- *glauca.†† *Valen.*
  - An. glauca. *Lam.*
- *ovata. *Lea.*
- *plana. *Lea.*
  - An. declivis. *Con.*
- *decora. *Lea.*

† On the authority of Des Moulins.

‡ M. Rang informs us that this species has the singular power of maintaining its vitality in the desiccated marshes of Africa, through six months of the burning sun of that region; and that he had a specimen sent to him in Paris, which was killed nearly thirteen months after it had been taken from its native bed, having occasionally been dipped in water for an hour or two only. He also mentions that the *Iridina rubens* is found with the *Chaiziana* in the Senegal, and possesses the same peculiarities of remaining in a state of torpidity during the season of great heat.

§ Ferussac considered *trigona* as the same with *crassa* of Swainson. The two figures, however, appear to me to be too different to be considered the same.

‖ Dr Kirtland informs me, that a specimen of this shell, which he showed to Mr Say, was considered by Mr S. to be his *imbecillis*. If this be so, Mr Say's name is entitled to precedence. I have never seen the shell described by Mr S. as *imbecillis*.

¶ See note on *An. cygnea*, page 137.

†† The figure of this shell resembles some individuals of *Myt. fluviatilis*, Soland. (Say's *An. cataracta*), but is straighter on the superior margin. In this character it resembles the *trapezialis*. The observations of Barnes, being made when little was known of this genus, cannot now be admitted.

NON-SYMPHYNOTE ANODONTÆ. — SMOOTH.

OVAL.

*gigantea.† *Lea.*

subvexa. *Con.*

*Stewartiana. *Lea.*

*gibbosa. *Say.*
An. inflata. *Major Le Conte's Cabinet.*

*grandis. *Say. Lesueur.*
An. corpulenta. *Coop.*

SUBROTUND.

*suborbiculata. *Say.*

OBOVATE.

*obtusa. *Spix.*
An. lituratum. *Spix.*

*sirionos. *D'Orb.*

*Patagonica. *Lam.*

NON-SYMPHYNOTE ANODONTÆ. — SMOOTH.

OBOVATE.

*lato-marginata.‡ *Lea. D'Orb.*
An. trapezius?§ *Spix.*
An. rotundus? *Spix.*

*Spixii. *D'Orb.*

porcifer.‖ *Gray.*

*trapezialis. *Lam. Blain.*
An. exotica.¶ *Lam. D'Orb.*
An. giganteus. *Spix.*
An. pencillatus? *Gray.*
An. Susannæ. *Gray.*
An. radiatus. *Spix.*

*anserina. *Spix.*

Georginæ. *Gray.*

Parishii.†† *Gray.*
Leila Parishii. *Gray.*

*Blainvilliana.‡‡ *Lea.*
An. trapezialis. *Crouch.*
Irid. trapezialis. *D'Orb.*

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† *An. giganteus*, Spix., having been before described by Lamarck under the name of *trapezialis* and *ex otica*, my species must retain this name.

‡ The *Patagonica* and *lato-marginata*, when they are better observed, may prove to be the same.

§ Spix's figure so closely resembles the *lato-marginata*, that I scarcely feel a doubt as to their being the same. He does not, however, notice the broad margin which is so characteristic of this species.

‖ Never having seen this species, I place it here on Mr Gray's authority.

¶ So far as I have been enabled to examine specimens of this and *trapezialis*, I am disposed to think they are not distinct species.

†† On the authority of Mr Gray.

‡‡ In my description of *Blainvilliana* (Vol. I. page 189), I observed that I was induced to believe that the animal of this shell would be found to differ from that of the genus *Anodonta*. M. D'Orbigny, in his Synopsis of the Fresh Water Shells of South America, has in fact so found it. The animal has two tubes. Nevertheless, although I then proposed if such should be the case that it should be placed in a new genus, under the name of *Columba*, I have continued it in the subgenus *Anodonta*, as, with the present artificial system, which is founded on the hinge, it could not with propriety be elsewhere classed. When the family shall be arranged in a system founded on the animal structure only, it evidently must be changed, and I doubt then if it should be placed in the *Iridina*, for although it is likely that all the species of that genus have two tubes, they do not seem to possess the deflected palleal cicatrix, which I noted in the description of *Blainvilliana*.

NON-SYMPHYNOTE ANODONTÆ.

SMOOTH.

OBOVATE.

*esula.† *Jan.*
Irid. esula. *D'Orb.*

crassa, *Swain.*

WIDE.

elongata. *Swain.*

*ensiformis. *Spix. D'Orb.*

*cylindracea. *Lea.*

*subcylindracea. *Lea.*

*Buchanensis. *Lea.*

*exilis. *Lea.*

OBOVATE.

*angulata. *Lea.*

NON-SYMPH. ANODON.

SMOOTH.

ARCUATE.

*tenebricosa. *Lea. D'Orb.*

*arcuata. *Fer.*

sinuosa. *Lam.*

*soleniformis. *D'Orb.*

The following species are unknown to me:—

Anodonta folium. *Fer.*
Anodonta Chinensis. *Fer.*
Anodonta curvatus. *Fer.*
Anodonta lugubris. *Say.*
Anodonta impura. *Say.*
Anodonta arcuta. *Cail.*
Anodonta Tævaii. *Rang.*
Anodonta Ferrarisii. *D'Orb.*
Anodonta lucida. *D'Orb.*
Anodonta Puelchana. *D'Orb.*

FOSSIL SPECIES.

Anodonta? Abyssina. *Mort.*

† M. D'Orbigny thinks that this is my *Blainvilliana*, but having his specimens and mine of both the species, I am induced still to believe that I am correct. The two specimens resemble each other, but are certainly distinct. The deflected palleal cicatrix exists in both, but the *esula* is more rotund, and the dorsal margin is more sinuous, and the nacre bluish white, while the five or six specimens of *Blainvilliana* which I have seen are all salmon colour.

GENUS PLATIRIS.†

I. SUBGENUS IRIDINA.‡

NON-SYMPH. IRIDINÆ. — SMOOTH.

OBOVATE.

ovata. *Swain.*

Irid. exotica. *Children.*

Pleiodon Macmurtriei. *Con.*

ARCUATE.

exotica. *Lam.*

Irid. striata. *Swain.*

An. exotica. *Blain.*

II. SUBGENUS SPATHA.

NON-SYMPH. SPATHÆ. — SMOOTH.

OVAL.

*rubens.§ *Lea.*

Irid. rubens. *Desh. Rang.*

An. rubens. *Lam. Blain.*

An. Clappertoni. *Kœnig*, in *Denham* and *Clapperton's* Journey.

WIDE.

*Nilotica. *Lea.*

Irid. Nilotica. *Sow. Fer. Crouch. Caill.*

An. dubia? *Bosc.*

Irid. Oudniœi. *Kœnig.*

---

† Genus Platiris (*nobis*), πλατυς, latus; ιρις, iris. *Testâ æquivalvis, latè transversâ; impressiones musculares grandes; cardo longus, linearis; ligamentum externum.*

‡ When Lamarck established his genus *Iridina*, he had seen but a single species, and of that only one individual, which is figured in the Encyclop. Methodique, pl. 204. Other species have been since referred to his genus, which do not seem to me to fulfil the conditions of his generic description. The phrase "cardo per longitudinem tuberculosus, subcrenatus," is by no means descriptive of the hinge belonging to the species just alluded to, which have their hinge smooth, or very slightly tuberculated. The figure in the Encyclopædia, and that of Blainville (Pl. 66, fig. 3), represent the same individual, and exhibit a character of hinge resembling in some measure that of an *Arca*. A second species, apparently agreeing with Lamarck's generic description, has been observed and described by Swainson, under the name of *Iridina ovata* (Phil. Mag. Vol. LXI.); and it has also been described by Mr Children under the name of *I. exotica*, (Brande's Journ. Vol. XV.). The specimen described in Brande's Journal is now in the British Museum, and that accurate naturalist, Mr John Edward Gray, who is one of the officers of that noble institution, informs me that he thinks it is identical with the shell upon which Mr Conrad has lately proposed to form a new genus, *Pleiodon*. Under these circumstances, it seems to me necessary to separate those shells having a *crenulated* hinge (which are true *Iridinæ*), from those having the hinge *smooth*, or very *slightly tuberculated*. I therefore arrange the *Iridina rubens*, *Nilotica*, &c., in a new subgenus, for which I propose the name of *Spatha*.

§ Mr Gray informs me that Cailliaud figures a species near to this from Egypt, which is in his possession, but I have not seen the shell or description.

NON-SYMPH. SPATHÆ. — SMOOTH.

WIDE.

Myt. Niloticus. *Wood.*
Le mutel. *Adan.*
Irid. mutel? *Rang.*

*elongata. *Lea.*
Irid. elongata. *Sow.*

*soleniformis. *Lea.*
Mycetopoda† soleniformis. *D'Orb.*

NON-SYMPH. SPATHÆ. — SMOOTH.

WIDE.

*siliquosa. *Lea.*
An. siliquosus. *Spix.*
An. pygmœum (young). *Spix.*
An. longinus. *Spix.*
Irid. longina. *Fer.*
Mycetopoda siliquosus. *D'Orb.*

*cœlestis. *Lea.*
Irid. rostrata? *Rang.*

---

† In the present arrangement, founded on the form of the hinge, I have deemed it better not to adopt D'Orbigny's genus *Mycetopoda*, founded on the natural character or habit of the animal. He says, "perforat, sicut pholadæ." In this habit it resembles *Unio oriens* (nobis), which I have elsewhere stated buries itself about twelve inches below the surface of the sand in which it lives. D'Orbigny mentions that the two anterior cicatrices are widely separated. A more important character appears to be in the fact, that the smaller cicatrix is placed before the larger one. In the *Unio* and *Anodonta* it is placed below it, and in the *Hyria* (Lam.) it is placed above, that is, in a line with the beak. I regret that I have only the very short description that this distinguished naturalist and traveller has given in his Synopsis. Should he publish these descriptions in a fuller manner, which I believe he intends, we may be so informed as not to disagree with him.

ADDENDA.

Unio Katherinæ.† *Lea.*

*Margaritana Franciscana.‡ *Lea.*
Monocondylæa Franciscana. *Mori.*

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† *Testâ obovatâ, inæquilaterali, subcompressâ; valvulis subcrassis; natibus prominulis; dentibus cardinalibus magnis, lateralibus subrectisque; margaritâ albâ.*

Just as this sheet was going to press I had the pleasure to receive a communication from Lady Katherine Douglas, of St Mary's Isles, Scotland, accompanied by three beautiful views, drawn by her ladyship, of a shell from Lake Superior, which appears to me not to have been before observed. Wishing that it should be appended to this Synopsis, I have given a short description of it, taking the liberty to propose that lady's name for it. At a future period I hope to be able to present it with a figure from her drawings. Its place in the preceding arrangement would be immediately after *U. purpuratus* (Lam.), being an *obovate, smooth, non-symphynote Unio.*

‡ Since this sheet was in type I have received from M. Moricand, of Geneva, a specimen of this interesting shell. Its place in this Synopsis would be between *M. calceola* and *Bonellii*, under the division *subrotund, smooth, non-symphynote Margaritanæ.* I owe to the kindness of this gentlemen also the *U. rotundus* (Spix and Wagner), and find it distinct from *U. Paranensis* (nobis), a matter which has been doubted by M. Moricand.

In Professor Rafinesque's Monograph, and in his subsequent Papers, are inserted descriptions under the following names. Not being able to identify them, I have deemed it better simply to give a catalogue of them. Those which I suppose I have identified will be found in the foregoing table.

Alasmodonta atropurpureum?
badium?
costata?
hians?
ponderosum?
papyraceum?
rugosum?
sulcatum?
scriptum?
viridis?

Anodonta atra?
aperta?
cuneata?
digonota?
inflata?
lata?
Ohiensis?
solenoides?

Unio antrosa?
atroviolacea?
argyratus?
attenuata?
aurata?
bicolor?
bullata?
biloba?
cardium?
Cliffordiana?
calendis?
chloris?
castaneus?
crassa?
cinerescens?
cuneata?
cyclips?
cuprea?
cyphia?
decorticata?
diploderma?
diaphanus?
ellipsaria?
elliptica?
fasciata?
fulvus?
fontinalis?
fulgens?
fasciolaris?
flava?
flexus?
fragilis?
granulatus?
interrupta?
lateralis?
latissima?
leptodon?
lævigata?
lamobrachys?
lineolata?
lividus?
megaptera?
montanus?
melaplata?
nervosa?
nodulata?
obliquata?
obovalis?
olivaria?
ovata?
Paphos?
pachostea?
ponderosus?
pallida?
plateolus?
pusella?
pallens?
perplexus?
quadrula?
retusa?
rimosus?
rosea?
rivularis?
stegaria?
sintoxia?
sinuata?
solenoides?
striata?
subrotunda?
torulosa?
teneltus?
triangularis?
triqueter?
truncata?
verrucosa?
viridis?
vittatus?
Venus?
zonalis?

Odatelia radiata?

Lasmonos fragilis?

Diplasma marginatæ?
similis?
vitrea?
striata?

GEOGRAPHICAL DISTRIBUTION

OF THE

SPECIES OF THE FAMILY NAIADES.

To render the preceding Synoptical Arrangement more complete, it was deemed advisable to make such a table as would throw together the species from each great division of the world; and to make this more useful, it has been thrown into alphabetic arrangement.

GENUS MARGARITA.

I. SUBGENUS UNIO.

EUROPE.

Batavus. *Lam.*
crassissimus. *Fer.*
elongatus. *Pfeif.*
litoralis. *Lam.*
ovalis. *Flem.*
pictorum. *Lam.*
platyrhynchus. *Rossmaesler.*

ASIA.

Bengalensis. *Lea.*
bilineatus. *Lea.*
cœruleus. *Lea.*
corrugatus. *Lam.*
Corrianus. *Lea.*
Grayanus. *Lea.*
lamellatus. *Lea.*
Leaii. *Gray.*
marginalis. *Lam.*
Murchisonianus. *Lea.*
olivarius. *Lea.*
ponderosus. *Lea.*
tigris. *Fer.*

AFRICA.

divaricatus. *Lea.*
Egyptiacus. *Cailliaud.*
Niloticus. *Fer.*

NORTH AMERICA.

acutissimus. *Lea.*
Æsopus. *Green.*

alatus. *Say.*
altilis. *Con.*
Anodontoides. *Lea.*
angustatus. *Lea.*
apiculatus. *Say.*
arcæformis. *Lea.*
arctior. *Lea.*
arctatus. *Con.*
arcus. *Con.*
asperrimus. *Lea.*
asper. *Lea.*
Barnesianus. *Lea.*
Blandingianus. *Lea.*
brevidens. *Lea.*
camelus. *Lea.*
camptodon. *Say.*
capsæformis. *Lea.*
carbonarius. *Lea.*
cariosus. *Say.*
castaneus. *Lea.*
Claibornensis. *Lea.*
clavus. *Lam.*
circulus. *Lea.*
cœlatus. *Con.*
coccineus. *Lea.*
compressus. *Lea.*
complanatus. *Lea.*
confertus. *Lea.*
Congaræus. *Lea.*
Conradicus. *Lea.*
contradens. *Lea.*
Cooperianus. *Lea.*
cor. *Con.*
cornutus. *Bar.*
crassidens. *Lam.*
crassus. *Say.*
creperus. *Lea.*
cuprinus. *Lea.*
Cumberlandianus. *Lea.*
cylindricus. *Say.*
decisus. *Lea.*
declivis. *Say.*
dehiscens. *Say.*
dolabriformis. *Lea.*
donaciformis. *Lea.*
Dorfeuillianus. *Lea.*
dromas. *Lea.*
ebenus. *Lea.*
elegans. *Lea.*
ellipsis. *Lea.*
fabalis. *Lea.*
Fisherianus. *Lea.*
foliatus. *Hild.*
folliculatus. *Lea.*
fragosus. *Con.*
fulvus. *Lea.*
gibbosus. *Bar.*
gibber. *Lea.*
glaber. *Lea.*
glans. *Lea.*
globosus. *Lea.*
gracilis. *Barnes.*
graniferus. *Lea.*
Greenii. *Con.*
Griffithianus. *Lea.*
Haysianus. *Lea.*
heterodon. *Lea.*
Hildrethianus. *Lea.*
Hopetonensis. *Lea.*
Hydianus. *Lea.*
inflatus. *Lea.*
infucatus. *Con.*
interruptus. *Lea.*
iris. *Lea.*
irroratus. *Lea.*
Jayensis. *Lea.*
jejunus. *Lea.*
Katherinæ. *Lea.*
Kirklandianus. *Lea.*
lævissimus. *Lea.*
lacrymosus. *Lea.*
lanceolatus. *Lea.*

Lecontianus. *Lea.*
lens. *Lea.*
lienosus. *Con.*
lugubris. *Lea.*
luteolus. *Lam.*
maculatus. *Con.*
Masoni. *Con.*
Medellinus. *Lea.*
Menkianus. *Lea.*
metanever. *Lea.*
Mühlfeldianus. *Lea.*
multiplicatus. *Lea.*
multiradiatus. *Lea.*
mytiloides. *Raf.*
modioliformis. *Lea.*
monodontus. *Say.*
Nashvillianus. *Lea.*
nasutus. *Say.*
notatus. *Lea.*
Novi-Eboraci. *Lea.*
obesus. *Lea.*
obliquus. *Lam.*
obscurus. *Lea.*
occidens. *Lea.*
ochraceus. *Say.*
orbiculatus. *Hild.*
ovatus. *Say.*
palliatus. *Lea.*
parvus. *Bar.*
patulus. *Lea.*
pectorosus. *Con.*
penitus. *Con.*
perdix. *Lea.*
perovatus. *Con.*
perovalis. *Con.*
perplexus. *Lea.*
personatus. *Say.*
phaseolus. *Hild.*
Phillipsii. *Con.*
pictus. *Lea.*
pileus. *Lea.*
pliciferus. *Lea.*
plicatus. *Lesueur.*
productus. *Con.*
pulcher. *Lea.*
pumilis. *Lea.*
purpuratus. *Lam.*
pustulatus. *Lea.*
pustulosus. *Lea.*
pyramidatus. *Lea.*
radiatus. *Lam.*
Rangianus. *Lea.*
Ravenelianus. *Lea.*
rectus. *Lam.*
retusus. *Lam.*
Roanokensis. *Lea.*
rotundatus. *Lam.*
rubellus. *Con.*
rubiginosus. *Lea.*
Schoolcraftensis. *Lea.*
securis. *Lea.*
Shepardianus. *Lea.*
simus. *Lea.*
solidus. *Lea.*
Sowerbianus. *Lea.*
spinosus. *Lea.*
splendidus. *Lea.*
stapes. *Lea.*
stramineus. *Con.*
subovatus. *Lea.*
subrotundus. *Lea.*
subtentus. *Say.*
sulcatus. *Lea.*
Taitianus. *Lea.*
Tampicoensis. *Lea.*
Tappanianus. *Lea.*
tæniatus. *Con.*
tenuissimus. *Lea.*
tenerus. *Rav.*
tetralasmus. *Say.*
trapezoides. *Lea.*
triangularis. *Bar.*

trigonus. *Lea.*
Troostensis. *Lea.*
tuberculatus. *Bar.*
turgidus. *Lea.*
undulatus. *Bar.*
Vanuxemensis. *Lea.*
varicosus. *Lea.*
Vaughanianus. *Lea.*
ventricosus. *Bar.*
venustus. *Lea.*
verrucosus. *Bar.*
vibex. *Con.*
Watereensis. *Lea.*
Zeiglerianus. *Lea.*
zigzag. *Lea.*

SOUTH AMERICA.

ambiguus. *Lea.*
angulatus. *Lea.*
atratus. *Lea.*
auratus. *Lea.*
Brownianus. *Lea.*
Burroughianus. *Lea.*
charruanus. *D'Orb.*
Childreni. *Gray.*
depressus. *Lam.*
delodontus. *Lam.*
faba. *D'Orb.*
gigas. *Lea.*
granosus. *Brug.*
membranaceus. *Lea.*
modestus. *Fer.*
multistriatus. *Lea.*
Paranensis. *Lea.*
parallelopipedon. *Lea.*
Patagonicus. *D'Orb.*
rhombeus. *Wag.*
syrmatophorus. *Lea.*
variabilis. *Lea.*

NEW HOLLAND.

Australis. *Lam.*
Novæ Hollandiæ. *Gray.*

HABITAT UNKNOWN.

angustus. *Lam.*
Cailliaudii. *Fer.*
emarginatus. *Lea.*
discus. *Lea.*
Nicklinianus. *Lea.*
nodulosus. *Lea.*
Smithii. *Gray.*
truncatus. *Swain.*

II. SUBGENUS MARGARITANA.

EUROPE.

Bonellii. *Lea.*
margaritifera. *Lea.*

NORTH AMERICA.

arcula. *Lea.*
calceola. *Lea.*
complanata. *Lea.*
confragosa. *Lea.*
deltoidea. *Lea.*
fabula. *Lea.*
Holstonia. *Lea.*
marginata. *Lea.*
radiata. *Lea.*
Raveneliana. *Lea.*
rugosa. *Lea.*
undulata. *Lea.*

SOUTH AMERICA.

Corrientesensis. *Lea.*
fossiculifera. *Lea.*

Franciscana. *Lea.*
Guarayana. *Lea.*
Minuana. *Lea.*
Paraguayana. *Lea.*
Parchappii. *Lea.*

I am unable to place the following in the table:

AFRICA.

Alasmodonta Tripolitina. *Fer.*

SOUTH AMERICA.

Alasmodonta incurva. *Fer.*

III. SUBGENUS DIPSAS.

ASIA.

discoideus. *Lea.*
plicatus. *Leach.*

IV. SUBGENUS ANODONTA.

EUROPE.

cygnea. *Drap.*

ASIA.

magnifica. *Lea.*
Woodiana. *Lea.*

AFRICA.

arcuata. *Fer.*
Chaiziana. *Rang.*

NORTH AMERICA.

angulata. *Lea.*
Benedictensis. *Lea.*
Buchanensis. *Lea.*
cylindracea. *Lea.*
decora. *Lea.*
edentula. *Lea.*
fragilis. *Lam.*
Ferussaciana. *Lea.*
fluviatilis. *Lea.*
gibbosa. *Say.*
gigantea. *Lea.*
glauca. *Valen.*
grandis. *Say.*
incerta. *Lea.*
Newtonensis. *Lea.*
Nuttalliana. *Lea.*
Oregonensis. *Lea.*
ovata. *Lea.*
pavonia. *Lea.*
Pepiniana. *Lea.*
plana. *Lea.*
salmonia. *Lea.*
Stewartiana. *Lea.*
suborbiculata. *Say.*
subcylindracea. *Lea.*
subvexa. *Con.*
Wahlamatensis. *Lea.*
Wardiana. *Lea.*

SOUTH AMERICA.

anserina. *Spix.*
Blainvilliana. *Lea.*
crassa. *Swain.*
elongata. *Swain.*
ensiformis. *Spix.*
esula. *Jan.*
Georginæ. *Gray.*
lato-marginata. *Lea.*
limnoica. *D'Orb.*

Mortoniana. *Lea.*
obtusa. *Spix.*
Parishii. *Gray.*
Patagonica. *Lam.*
porcifer. *Gray.*
Spixii. *D'Orb.*
sinuosa. *Lam.*
sirionos. *D'Orb.*
soleniformis. *D'Orb.*
tenebricosa. *Lea.*
trapezialis. *Lam.*
trigona. *Spix.*

NEW HOLLAND.

purpurea. *Valen.*

HABITAT UNKNOWN.

crispata. *Lam.*
exilis. *Lea.*
uniopsis. *Lam.*
undulata. *Say.*

The following species are unknown to me:—

EUROPE.

Anodonta curvatus. *Fer.*

ASIA.

Anodonta folium. *Fer.*
Anodonta Chinensis. *Fer.*

AFRICA.

Anodonta arcuta. *Caill.*
Tawaii. *Rang.*

NORTH AMERICA.

Anodonta lugubris. *Say.*
Anodonta impura. *Say.*

FOSSIL SPECIES.

NORTH AMERICA.

Anodonta? Abyssina. *Mort.*

GENUS PLATIRIS.

I. SUBGENUS IRIDINA.

AFRICA.

ovata. *Swainson.*

HABITAT UNKNOWN.

exotica. *Lam.*

II. SUBGENUS SPATHA.

AFRICA.

cœlestis. *Lea.*
elongata. *Lea.*
Nilotica. *Lea.*
rubens. *Lam.*

SOUTH AMERICA.

siliquosa. *Lea.*
soleniformis. *Lea.*

Not being able satisfactorily to make out or arrange the following species, I have deemed it best simply to insert a list, in their order of habitat.

EUROPE.

Unio rubens. *Menke.*
Unio rugatus. *Menke.*
Unio gibbus.† *Speng.*
Unio truncatus.† *Speng.*

ASIA.

Unio orientalis. *Fer.*

AFRICA.

Unio Juliani. *Rang.*

NORTH AMERICA.

Unio Grœnlandicus.† *Schrö.*
Unio purpuriatus. *Say.*
Unio oviformis. *Con.*
Unio furvus. *Con.*

SOUTH AMERICA.

Unio nitidens. *Fer.*
Unio obtusus. *Fer.*
Unio preciosus. *Fer.*
Unio psammoica. *D'Orb.*
Unio rhuacoica. *D'Orb.*
Unio Fontainiana. *D'Orb.*
Unio hylæa. *D'Orb.*
Unio Guaraniana. *D'Orb.*

HABITAT UNKNOWN.

Unio pulchellus. *Fer.*
Unio musivus.† *Speng.*

The following Fossil species have been observed in Great Britain:—

Unio crassiusculus. *Sow.*
Unio concinnus. *Sow.*
Unio uniformis. *Sow.*
Unio acutus. *Sow.*
Unio Listeri. *Sow.*
Unio Solandri. *Sow.*
Unio porrectus. *Sow.*
Unio compressus. *Sow.*
Unio antiquus. *Sow.*
Unio aduncus. *Sow.*
Unio cordiformis. *Sow.*
Unio crassissimus. *Sow.*
Unio subconstrictus. *Sow.*
Unio hybridus. *Sow.*
Unio Urii. *Flem.*
Unio abductus. *Phil.*
Unio peregrinus. *Phil.*

The following have been observed in the United States:

Unio petrosus. *Mort.*
Unio tumulatis. *Mort.*
Unio terrenus. *Mort.*
Unio saxulum. *Mort.*

† On the authority of Ferussac.

LIST OF AUTHORS.

The following Authors are quoted, and their names chiefly abbreviated.

Adan.—Adanson.

Bosc.
Bouil.—Bouillet.
Blain.—Blainville.
Bar.—Barnes.
Brug.—Bruguière.
Ben.—Benson.

Crouch.
Con.—Conrad.
Chem.—Chemnitz.
Caill.—Cailliaud.
Cooper.
Children.

Dill.—Dillwyn.
Desh.—Deshayes.
Drap.—Draparnaud.
Des Moul.—Des Moulins.
Don.—Donovan.
Den.—Denham.
D'Orb.—D'Orbigny.

Eat.—Eaton.

Fer.—Ferussac.
Flem.—Fleming.
Fork.—Forkeil.
Far.—Farines.

Gray.
Green.
Grat.—Grateloup.
Grono.—Gronovius.
Gmel. Gmelin.

Hild.—Hildreth.
Humph.—Humphreys.

Jan.

Klein.
Knorr.
Kœnig.

Lam.—Lamarck.
Lesueur.
List.—Lister.
Less.—Lesson.

Mort.—Morton.
Mich.—Michaud.
Monta.—Montagu.
Mori.—Moricand.
Mat.—Maton.
Mühl.—Mühlfeld.
Menke.

Nil.—Nilsson.

Poir.—Poiret.
Petiv.—Petiver.
Pfeif.—Pfeiffer.

Poli.
Pay.—Payraudeau.
Phil.—Phillips.

Retz.—Retzius.
Rav.—Ravenel.
Ross.—Rossmaesler.
Raf.—Rafinesque.
Rang.

Shep.—Shepherd.
Speng.—Spengler.
Stud.—Studer.
Schmidt.
Schroet.—Schroeter.
Solan.—Solander.
Sow.—Sowerby.
Schum.—Schumaker.
Spix.
Swain.—Swainson.
Say.

Turt.—Turton.

Valen.—Valencienes.

Wag.—Wagner.
Wood.

Yoldi.

Zeig.—Zeigler.